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10/572,785	03/21/2006	Jochen Wehner	WEHNER-2 PCT	9559
7055	7590	12/09/2010	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C.			MCCULLEY, MEGAN CASSANDRA	
1950 ROLAND CLARKE PLACE			ART UNIT	PAPER NUMBER
RESTON, VA 20191			1767	
			NOTIFICATION DATE	DELIVERY MODE
			12/09/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/572,785	WEHNER, JOCHEN	
	<b>Examiner</b>	<b>Art Unit</b>	
	Megan McCulley	1767	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 20 September 2010.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 20-41 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 20-41 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>9/20/2010</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 20-23 and 26-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al. (U.S. Pat. 5,077,371) in view of Althaus et al. (U.S. Pat. 4,950,792) in further view of Sondhe et al. (U.S. Pat. 5,340,652).

Regarding claim 20, 33, 34, 36, and 38: Singh et al. teaches a process for production comprising mixing one or more low molecular weight polyols having a molecular weight of less than 250 (col. 2 lines 20-28) and being a polyether polyol with two hydroxyl groups (col. 3 lines 17-29). Therefore, the concentration of hydroxyl groups per kilogram is between 8 (MW=250) and 22 (MW=90, lowest molecular weight of the preferred polyol, butanediol). Also disclosed is a high molecular weight polyol having a molecular weight of 650-3000 with a functionality of 2 (col. 2 lines 50-66). Therefore, the concentration of hydroxyl groups per kilogram is between 0.66 (MW=3000) and 3 (MW=650). Also mixed are an aromatic amine (col. 1 lines 29-33) and a polyisocyanate (col. 2 lines 24-28).

Singh et al. does not disclose the polyol component premixed before the mixing of the polyol component and the polyisocyanate component. However, Althaus et al. teaches mixing the polyol and amine before processing with the isocyanate (col. 4 lines 11-18). Singh et al. and Althaus et al. are analogous art since they are both concerned with the same field of endeavor, namely polyurethane production. At the time of the

invention a person having ordinary skill in the art would have found it obvious to combine the processing steps disclosed in Althaus et al. with the composition disclosed in Singh et al. and would have been motivated to do so since it is a process usually used in polyurethane production and requires fewer reaction sequence steps than prepolymer formation (col. 4 lines 11-28)

Singh et al. also does not disclose a light resistant aromatic amine. However, Althaus et al. teaches the light resistant aromatic amine 4,4'-methylene-bis(3-chloro-2,6-diethylaniline) (col. 2 lines 53-55). At the time of the invention a person having ordinary skill in the art would have found it obvious to substitute the amine disclosed in Althaus et al. for the amine of Singh et al. and would have been motivated to do so since it is very temperature stable, as evidenced by Althaus et al. (col. 2 lines 20-25).

Singh et al. also does not disclose bringing the mixture into contact with a synthetic resin not cured or not completely cured. However, Sondhe et al. teaches mixing (col. 13 line 31) a composition comprising an aromatic amine (col. 3 line 3), and a polyol component and a polyisocyanate component (abstract). Sondhe et al. also teaches that upon mixing, the urethane system will immediately commence reaction (col. 13 lines 33-35); therefore it is at least partially cured. Also disclosed is application to an epoxy, which is not fully cured (col. 3 lines 59-62). Sondhe et al. and Singh et al. are analogous art because they are both concerned with the same field of endeavor, namely polyurethane compositions. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the composition of Singh et al. with the process of Sondhe et al. and would have been motivated to do so for

such desirable properties as lower residual free aromatic polyisocyanates, as evidenced by Singh et al. (col. 1 lines 5-10).

The process of the above combination would implicitly yield a synthetic resin composite material.

Regarding claim 21: While Singh et al. does not directly teach that the gel coat at 23°C displays an elongation at break (measured as per DIN EN ISO 527) of at least 3%, since all of the components are present in the composition it is inherent that the composition would have these properties. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain a composition with these properties.

Regarding claim 22: Singh et al. does not teach the polyurethane gel coat is not completely cured. However, at the time of the invention a person having ordinary skill in the art would have found it obvious to not completely cure the polyurethane gel coat based on the teaching of Sondhe et al. and would have been motivated to do so since this would allow the urethane to bleed and intermingle with the epoxy in order to form chemically fused layers, as evidenced by Sondhe et al. (col. 3 lines 57-68).

Regarding claim 23: Singh et al. does not disclose that the resin is applied onto the gel coat material. However, Sondhe et al. teaches applying the gel coat material onto the resin (abstract). It is *prima facie* obvious to change the sequence of adding ingredients. At the time of the invention a person having ordinary skill in the art would

have found it obvious to apply the epoxy resin onto the gel coating and would have been motivated to do so when application of an additional layer on top of the epoxy is necessary, since it is disclosed that the epoxy composition has good bonding strength (col. 13 lines 1-7).

Regarding claims 26, 27, 28, and 29: Althaus et al. teaches 4,4'-methylene-bis(3-chloro-2,6-diethylaniline) (col. 2 lines 53-55), which is a 4,4'-methylenebis (2,6-dialkyl-aniline). As evidenced by paragraphs 60-63 of the Pre-Grant Publication of the instant application, this particular aromatic amine when subjected to the limitations found in claims 26 and 27 of the instant application inherently gives the desired gel time and color shade change. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain a composition with these properties.

Regarding claim 30: Singh et al. teaches the basic composition as set forth above. Not disclosed is the amount of the amine. However, Althaus et al. teaches 19.5 parts amine per 100 parts polyol (Table 3 Amine No. V). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the amount of amine of Althaus et al. with the composition of Singh et al. and would have been motivated to do so to achieve the desired pot life.

Regarding claims 31, 32, and 37: Singh et al. teaches 0-8% of the low molecular weight polyol in the polyol component (col. 3 lines 17-29). Therefore, there is 100-92% of the high molecular weight component.

Regarding claim 35: Singh et al. teaches the high molecular weight polyol is a polyether polyol (col. 2 lines 50-66).

Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al. (U.S. Pat. 5,077,371) in view of Althaus et al. (U.S. Pat. 4,950,792) in further view of Sondhe et al. (U.S. Pat. 5,340,652) as applied to claim 20 and in further view of Motsinger et al. (U.S. Pat. 3,217,536).

Regarding claims 24 and 25: Singh et al. teaches the basic process as set forth above. Not disclosed is the synthetic resin is a reinforced contains reinforcing materials. However, Motsinger et al. teaches a polyurethane coating on an epoxy resin laminated with fiberglass (col. 3 line 66-col. 4 line 1). Singh et al. and Motsinger et al. are analogous art because they are both concerned with the same field of endeavor, namely polyurethanes. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the fiberglass laminated epoxy of Motsinger et al. with the composition of Singh et al. and would have been motivated to do so for such desirable properties as to provide strength and weather protection, as evidenced by Motsinger et al. (col. 4 lines 1-14).

Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al. (U.S. Pat. 5,077,371) in view of Althaus et al. (U.S. Pat. 4,950,792) in further view of Sondhe et al. (U.S. Pat. 5,340,652) as applied to claim 38 and in further view of Chapin (U.S. Pat. 4,089,215).

Regarding claim 39: Singh et al. teaches the basic material as set forth above. Not disclosed is that it is part of a rotor vane. However, Chapin teaches a similar material on a rotor vane (abstract, col. 5 lines 45-55). The use of the rotor vane in a wind power plant is intended use and carries little patentable weight (see MPEP 2111.02 II). Singh et al. and Chapin are analogous art since they are both concerned with the same field of endeavor, namely polyurethane products. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the use of Chapin with the composition of Singh et al. and would have been motivated to do so since a rotor vane needs to have low inertia to provide a prompt and accurate response to changes in rate of air flow, as evidenced by Chapin (col. 5 lines 45-55).

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al. (U.S. Pat. 5,077,371) in view of Althaus et al. (U.S. Pat. 4,950,792) in further view of Sondhe et al. (U.S. Pat. 5,340,652).

Regarding claim 40: Singh et al. teaches a process for production comprising mixing one or more low molecular weight polyols having a molecular weight of less than 250 (col. 2 lines 20-28) and being a polyether polyol with two hydroxyl groups (col. 3 lines 17-29). Therefore, the concentration of hydroxyl groups per kilogram is between 8 (MW=250) and 22 (MW=90, lowest molecular weight of the preferred polyol, butanediol). Also disclosed is a high molecular weight polyol having a molecular weight of 650-3000 with a functionality of 2 (col. 2 lines 50-66). Therefore, the concentration of

hydroxyl groups per kilogram is between 0.66 (MW=3000) and 3 (MW=650). Singh et al. teaches 0-8% of the low molecular weight polyol in the polyol component (col. 3 lines 17-29). Therefore, there is 100-92% of the high molecular weight component. Also mixed are an aromatic amine (col. 1 lines 29-33) and a polyisocyanate (col. 2 lines 24-28).

Singh et al. does not disclose the polyol component premixed before the mixing of the polyol component and the polyisocyanate component. However, Althaus et al. teaches mixing the polyol and amine before processing with the isocyanate (col. 4 lines 11-18). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the processing steps disclosed in Althaus et al. with the composition disclosed in Singh et al. and would have been motivated to do so since it is a process usually used in polyurethane production and requires fewer reaction sequence steps than prepolymer formation (col. 4 lines 11-28)

Singh et al. also does not disclose a light resistant aromatic amine. However, Althaus et al. teaches the light resistant aromatic amine 4,4'-methylene-bis(3-chloro-2,6-diethylaniline) (col. 2 lines 53-55). At the time of the invention a person having ordinary skill in the art would have found it obvious to substitute the amine disclosed in Althaus et al. for the amine of Singh et al. and would have been motivated to do so since it is very temperature stable, as evidenced by Althaus et al. (col. 2 lines 20-25). Not disclosed is the amount of the amine. However, Althaus et al. teaches 19.5 parts amine per 100 parts polyol (Table 3 Amine No. V). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the amount of

amine of Althaus et al. with the composition of Singh et al. and would have been motivated to do so to achieve the desired pot life.

Singh et al. also does not disclose bringing the mixture into contact with a synthetic resin not cured or not completely cured. However, Sondhe et al. teaches mixing (col. 13 line 31) a composition comprising an aromatic amine (col. 3 line 3), and a polyol component and a polyisocyanate component (abstract). Sondhe et al. also teaches that upon mixing, the urethane system will immediately commence reaction (col. 13 lines 33-35); therefore it is at least partially cured. Also disclosed is application to an epoxy, which is not fully cured (col. 3 lines 59-62). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the composition of Singh et al. with the process of Sondhe et al. and would have been motivated to do so for such desirable properties as lower residual free aromatic polyisocyanates, as evidenced by Singh et al. (col. 1 lines 5-10).

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al. (U.S. Pat. 5,077,371) in view of Althaus et al. (U.S. Pat. 4,950,792) in further view of Sondhe et al. (U.S. Pat. 5,340,652).

Regarding claim 41: Singh et al. teaches a process for production comprising mixing one or more low molecular weight polyols having a molecular weight of less than 250 (col. 2 lines 20-28) and being a polyether polyol with two hydroxyl groups (col. 3 lines 17-29). Therefore, the concentration of hydroxyl groups per kilogram is between 8 (MW=250) and 22 (MW=90, lowest molecular weight of the preferred polyol,

butanediol). Also disclosed is a high molecular weight polyol having a molecular weight of 650-3000 with a functionality of 2 (col. 2 lines 50-66). Therefore, the concentration of hydroxyl groups per kilogram is between 0.66 (MW=3000) and 3 (MW=650). Also mixed are an aromatic amine (col. 1 lines 29-33) and a polyisocyanate (col. 2 lines 24-28).

Singh et al. does not disclose the polyol component premixed before the mixing of the polyol component and the polyisocyanate component. However, Althaus et al. teaches mixing the polyol and amine before processing with the isocyanate (col. 4 lines 11-18). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the processing steps disclosed in Althaus et al. with the composition disclosed in Singh et al. and would have been motivated to do so since it is a process usually used in polyurethane production and requires fewer reaction sequence steps than prepolymer formation (col. 4 lines 11-28)

Singh et al. also does not disclose a light resistant aromatic amine. However, Althaus et al. teaches the light resistant aromatic amine 4,4'-methylene-bis(3-chloro-2,6-diethylaniline) (col. 2 lines 53-55). At the time of the invention a person having ordinary skill in the art would have found it obvious to substitute the amine disclosed in Althaus et al. for the amine of Singh et al. and would have been motivated to do so since it is very temperature stable, as evidenced by Althaus et al. (col. 2 lines 20-25).

Singh et al. also does not disclose bringing the mixture into contact with a synthetic resin not cured or not completely cured. However, Sondhe et al. teaches mixing (col. 13 line 31) a composition comprising an aromatic amine (col. 3 line 3), and

a polyol component and a polyisocyanate component (abstract). Sondhe et al. also teaches that upon mixing, the urethane system will immediately commence reaction (col. 13 lines 33-35); therefore it is at least partially cured. Also disclosed is application to an epoxy, which is not fully cured (col. 3 lines 59-62). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the composition of Singh et al. with the process of Sondhe et al. and would have been motivated to do so for such desirable properties as lower residual free aromatic polyisocyanates, as evidenced by Singh et al. (col. 1 lines 5-10). It is *prima facie* obvious to change the sequence of adding ingredients. At the time of the invention a person having ordinary skill in the art would have found it obvious to apply the epoxy resin onto the gel coating and would have been motivated to do so when application of an additional layer on top of the epoxy is necessary, since it is disclosed that the epoxy composition has good bonding strength (col. 13 lines 1-7).

### ***Response to Arguments***

Applicant's arguments with respect to claims 23 and 41 have been considered but are moot in view of the new ground of rejection.

Applicant's arguments filed September 20, 2010 with respect to claims 20-22 and 24-40 have been fully considered but they are not persuasive.

A) Applicant's argument that Sondhe et al. is not concerned with polyurethane compositions cured with aromatic amines is persuasive. However, it is still held that Sondhe et al. and Singh et al. are analogous art because they are both concerned with

the same field of endeavor, namely polyurethane compositions. The polyurethanes of each reference are two part systems and contain high molecular weight polyols mixed with low molecular weight polyols as in the instant application.

B) Applicant's argument that Sondhe et al. does not use amines as hardeners for the urethane system and therefore a person having ordinary skill in the art would assume that the use of amine hardeners is discouraged is not persuasive. There are no drawbacks to using amine hardeners taught by Sondhe et al. The prior art of record teaches the use of amine hardeners in Singh et al. There is no teaching away.

C) Applicant's argument that Althaus et al. is not analogous art is not persuasive. Singh et al. and Althaus et al. are analogous art since they are both concerned with the same field of endeavor, namely polyurethane production.

D) Applicant's argument that Althaus et al. does not provide motivation to mix the amines with the polyol component is not persuasive since it is stated that fewer processing steps are needed, as set forth in the rejection above.

E) Applicant's argument that Althaus et al. does not teach an example using the preparation method claimed is not persuasive. Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (MPEP 2123 II).

F) Applicant's argument that Singh et al. was trying to solve a problem which is different from that which the applicant was trying to solve, namely a short demold time, is not persuasive. Firstly, this property of the composition is unclaimed. Secondly, the Court in *KSR* held that it is an error to assume a person having ordinary skill in the art

would look only to the problem the patentee was trying to solve and be led only to those elements of prior art designed to solve the same problem (MPEP 2141 IIA2).

G) Applicant's argument that Motsinger et al. does not teach the particulars of the polyurethane is not persuasive. Singh et al. teaches the basic claimed process, while Motsinger et al. is merely relied on to teach a fiberglass laminated epoxy. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

H) Applicant's argument that Motsinger et al. is not analogous art is not persuasive. As the Office action states, Motsinger et al. is analogous art in the field of polyurethanes.

I) Applicant's argument that Chapin is not analogous art is not persuasive. As the Office action states, Chapin is analogous art in the field of polyurethane products.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megan McCulley whose telephone number is (571)270-3292. The examiner can normally be reached on Monday, Wednesday, Thursday, and Friday 8:30-4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. M./  
Examiner, Art Unit 1767

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1767